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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,808	09/18/2001	Franz Steinbacher	13321US01	8211

7590 10/23/2002

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EXAMINER

JUNG, WILLIAM C

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

S.M-

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/954,808	STEINBACHER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	William Jung	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on September 18, 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-8, 12, 13, 17-19, and 23 are rejected under 35 U.S.C. 102(b) as being unpatentable by *Seyed-Bolorforosh et al* (US 5,891,038).

Claims 1, 12, and 17: Seyed-Bolorforosh discloses of all claimed inventions in claims 1, 12, and 17. Seyed-Bolorforosh discloses of ultrasound device, which includes transmit design scheme consists of firing two or more waveforms or beams for each single scanline in a predetermined focal zone (abstract). Each scanline is represented by composite of multiple received signals respective of each transmission described above (abstract; col. 2, line 14-35).

Claims 2, 3, 6, 7, 18, and 19: Seyed-Bolorforosh also discloses of transmit and receive parameters including time delay, pulse lengths, frequency, and bandwidth frequency (col. 2, line 36-48; col. 6, line 36 – col. 7, line 21).

Claims 13, 4, 8, and 23: Seyed-Bolorforosh further discloses of multiple transmit with transmit parameter determined by predetermined focus depth (col. 6, line 63- col. 7, line 21).

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3. Claims 1, 5, 14, and 15 are rejected under 35 U.S.C. 102(a) as being unpatentable by *Bolorforosh et al* (US 6,277,073).

Bolorforosh discloses of all claimed inventions in claims 1, 5, 14, and 15 where a composite scanline is formed from a dual transmission/reception events. The parameters governing the first and second transmit and receive function can be defined by aperture size (or more correctly referred to as subapertures) within the multiple transducer element array. In addition, the other parameters also includes difference receive focus depths for the first and second echoes (col. 3, line 32 – col. 4, line 30).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Seyed-Bolorforosh et al* in view of *Rust et al* (US 6,050,942).

Seyed-Bolorforosh substantially discloses of all claimed inventions in claim 16 as described above. Rust discloses of an ultrasound system where a composite scanline is formed from multiple scanlines with weighting factor. The weighting factor is determined by the number of scans used obtain the composite signal as shown in figure 4, however, the figure does not limit the number of scan for each composite scanline. Therefore, Rust anticipates that the weighting factor equals to  $1/N$  where N is a number of ultrasound beams transmitted along a common line. Both Seyed-Bolorforosh and Rust discloses of combining multiple scans to a single scanline to acquire a composite scanline

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of an image. While Seyed-Bolorforosh does not disclose of weighting factor, Rust clearly defines the use of it to attenuate the multiple scans. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Seyed-Bolorforosh to the teachings of Rust to achieve the claimed inventions.

6. Claims 9-11 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bolorforosh et al* as applied to claims 1 and 17 above, and further in view of *Rust et al*.

Seyed-Bolorforosh substantially discloses of all claimed inventions in claims 9-11 and 20-22 as described above. Rust discloses of all claimed invention as described above. Both Bolorforosh and Rust discloses of combining multiple scans to a single scanline to acquire a composite scanline of an image. While Seyed-Bolorforosh does not disclose of weighting factor Rust clearly defines the parameter. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Seyed-Bolorforosh to the teachings of Rust to achieve the claimed inventions.

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***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung whose telephone number is 703-605-4364.

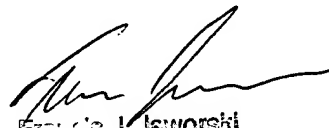
The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on 703-305-3256. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0758 for regular communications and 703-308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

William Jung  
Examiner  
Art Unit 3737

WCJ  
October 18, 2002

  
Francis J. Jaworski  
Primary Examiner